

What is Claimed is:

1. A walking wheel for a bicycle riding on a ground surface, comprising:

a hub adapted for rotatably mounting to said bicycle;

a plurality of supporting members outwardly extended from said hub;

5 a plurality of walking elements connected to said supporting members respectively, wherein each of said walking elements has a stepping surface defining a toe portion and a heel portion flexibly extended therefrom, wherein said stepping surfaces of said walking elements are coaxially aligned to said hub in a toe-to-heel manner to form a discrete driving surface with respect to said hub in such a manner that when said hub is
10 driven to rotate, one of said walking elements is arranged for stepping on said ground surface in a human toe-heel walking manner that said heel portion of said stepping surface of said following walking element steps on said ground surface when said heel portion of said stepping surface of said preceding walking element lifts up from said ground surface.

15 2. The walking wheel, as recited in claim 1, wherein said stepping surface of each of said walking elements has a predetermined curvature to form an arc of said discrete driving surface of said walking wheel.

20 3. The walking wheel, as recited in claim 1, wherein each of said supporting members comprises an elongated supporting leg having an inner end radially extended from said hub and an outer end pivotally connected to said respective walking element.

4. The walking wheel, as recited in claim 2, wherein each of said supporting members comprises an elongated supporting leg having an inner end radially extended from said hub and an outer end pivotally connected to said respective walking element.

25 5. The walking wheel, as recited in claim 3, wherein each of said supporting members comprises an ankle joint coupling said supporting leg with said respective walking element, wherein said ankle joint comprises two resilient elements coupling said

respective supporting leg with said toe portion and said heel portion respectively for applying an urging pressure against said walking element.

5 6. The walking wheel, as recited in claim 4, wherein each of said supporting members comprises an ankle joint coupling said supporting leg with said respective walking element, wherein said ankle joint comprises two resilient elements coupling said
respective supporting leg with said toe portion and said heel portion respectively for applying an urging pressure against said walking element.

10 7. The walking wheel, as recited in claim 2, wherein each of said walking elements comprises a walking frame, having an arc-shape, pivotally connected to said respective supporting member, and a shoe having a bottom non-slipping surface as said
stepping surface, wherein said shoe is replaceably worn at said walking frame to reinforce said curvature of said stepping surface of said shoe.

15 8. The walking wheel, as recited in claim 4, wherein each of said walking elements comprises a walking frame, having an arc-shape, pivotally connected to said respective supporting member, and a shoe having a bottom non-slipping surface as said
stepping surface, wherein said shoe is replaceably worn at said walking frame to reinforce said curvature of said stepping surface of said shoe.

20 9. The walking wheel, as recited in claim 6, wherein each of said walking elements comprises a walking frame, having an arc-shape, pivotally connected to said respective supporting member, and a shoe having a bottom non-slipping surface as said
stepping surface, wherein said shoe is replaceably worn at said walking frame to reinforce said curvature of said stepping surface of said shoe.

25 10. The walking wheel, as recited in claim 1, further comprising a plurality of guiding elements connecting said walking elements respectively, wherein each of said guiding elements has two ends respectively connecting said toe portion of said preceding
walking element to said heel portion of said following walking element so as to alignedly guide said walking elements in a toe-to-heel manner.

30 11. The walking wheel, as recited in claim 4, further comprising a plurality of guiding elements connecting said walking elements respectively, wherein each of said guiding elements has two ends respectively connecting said toe portion of said preceding

walking element to said heel portion of said following walking element so as to alignedly guide said walking elements in a toe-to-heel manner.

12. The walking wheel, as recited in claim 9, further comprising a plurality of guiding elements connecting said walking elements respectively, wherein each of said
5 guiding elements has two ends respectively connecting said toe portion of said preceding walking element to said heel portion of said following walking element so as to alignedly guide said walking elements in a toe-to-heel manner.

13. A bicycle for riding on a ground surface, comprising:

a bicycle frame having a front portion and a rear portion;

10 a steering assembly for steering said bicycle frame to a certain direction;

two walking wheels rotatably mounted at said front and rear portion, wherein each of said walking wheels comprises:

a hub for rotatably mounting to said bicycle frame;

a plurality of supporting members outwardly extended from said hub; and

15 a plurality of walking elements connected to said supporting members respectively, wherein each of said walking elements has a stepping surface defining a toe portion and a heel portion flexibly extended therefrom, wherein said stepping surfaces of said walking elements are coaxially aligned to said hub in a toe-to-heel manner to form a discrete driving surface; and

20 a transmission means for driving at least one of said walking wheels to rotate, wherein when said hub is driven to rotate, one of said walking elements is arranged for stepping on said ground surface in a human toe-heel walking manner that said heel portion of said stepping surface of said following walking element steps on said ground surface when said heel portion of said stepping surface of said preceding walking element
25 lifts up from said ground surface.

14. The walking wheel, as recited in claim 10, wherein said stepping surface of each of said walking elements has a predetermined curvature to form an arc of said discrete driving surface of said walking wheel.

15. The walking wheel, as recited in claim 14, wherein each of said supporting
5 members comprises an elongated supporting leg having an inner end radially extended from said hub and an outer end pivotally connected to said respective walking element, and an ankle joint coupling said supporting leg with said respective walking element, wherein said ankle joint comprises two resilient elements coupling said respective supporting leg with said toe portion and said heel portion respectively for applying an
10 urging pressure against said walking element.

16. The walking wheel, as recited in claim 14, wherein each of said walking elements comprises a walking frame, having an arc-shape, pivotally connected to said respective supporting member, and a shoe having a bottom non-slipping surface as said
stepping surface, wherein said shoe is replaceably worn at said walking frame to
15 reinforce said curvature of said stepping surface of said shoe.

17. The walking wheel, as recited in claim 15, wherein each of said walking elements comprises a walking frame, having an arc-shape, pivotally connected to said respective supporting member, and a shoe having a bottom non-slipping surface as said
stepping surface, wherein said shoe is replaceably worn at said walking frame to
20 reinforce said curvature of said stepping surface of said shoe.

18. The walking wheel, as recited in claim 13, further comprising a plurality of guiding elements connecting said walking elements respectively, wherein each of said guiding elements has two ends respectively connecting said toe portion of said preceding walking element to said heel portion of said following walking element so as to alignedly
25 guide said walking elements in a toe-to-heel manner.

19. The walking wheel, as recited in claim 15, further comprising a plurality of guiding elements connecting said walking elements respectively, wherein each of said guiding elements has two ends respectively connecting said toe portion of said preceding walking element to said heel portion of said following walking element so as to alignedly
30 guide said walking elements in a toe-to-heel manner.

20. The walking wheel, as recited in claim 17, further comprising a plurality of guiding elements connecting said walking elements respectively, wherein each of said guiding elements has two ends respectively connecting said toe portion of said preceding walking element to said heel portion of said following walking element so as to alignedly
5 guide said walking elements in a toe-to-heel manner.